

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (currently amended) A liquid drop discharge apparatus comprising:

an ~~An~~ ink-jet head control circuit ~~comprising~~ including:

a data storage unit, which respectively stores a first data block and a second data block following the first data block, for liquid drop discharge; ~~and~~

a data conversion unit, which calculates a state transition data block based on the stored first and second data blocks~~[[;]]~~ ~~wherein: if the first data block is the same as the second data block, the data conversion unit~~ output[[s]]ing a the state transition data block as having a first value when the first data block is the same as the second data block and as a second value when [[;]] ~~and if the first data block is different from the second data block; and[[;,]]~~ ~~the data conversion unit outputs a state transition data block having a second value.~~

a first shift register, which receives the state transition data block from the data conversion unit and which serially outputs the state transition data block;
and

an ink-jet head module for discharging liquid drops through a plurality of nozzles,
the ink-jet head module being in communication with the ink-jet head control circuit and
including:

a second shift register, which serially receives the state transition data
block from the first shift register;

a data storage unit, which stores the first data block; and

a data conversion unit, which converts the received state transition data
block into the second data block by determining that the second data block is the
same as the first data block when the state transition data block has the first
value and that the second data block is different from the first data block when
the state transition data block has the second value;

wherein the ink-jet head module discharges the liquid drops through the plurality
of nozzles according to the second data block.

2. (currently amended) The liquid drop discharge apparatus ~~ink-jet head control circuit~~
according to claim 1, wherein: the ink-jet head control circuit is provided in a driving
device, which outputs the state transition data block to ~~an~~ the ink-jet head module for
discharging liquid drops through ~~a~~ the plurality of nozzles.

3. (currently amended) The liquid drop discharge apparatus ~~ink-jet head control circuit~~
according to claim 1, wherein: the ink-jet head control circuit is provided in a computer
connected to a driving device, which outputs the state transition data block to ~~an~~ the ink-

jet head module for discharging liquid drops through a plurality of nozzles.

4. (cancelled)

5. A data transmission method ~~of~~ for interfacing ~~the~~ an ink-jet head control circuit ~~according to claim 1 with an~~ an ink-jet head module, the method comprising:
~~according to claim 4.~~

storing a first data block and a second data block following the first data block, for
liquid drop discharge;

calculating a state transition data block based on the stored first and second data
blocks, the state transition data block having a first value when the first data block is the
same as the second data block and having a second value when the first data block is
different from the second data block;

communicating the state transition data block to an ink-jet head module for
discharging liquid drops through a plurality of nozzles;

converting the state transition data block into the second data block by
determining that the second data block is the same as the first data block when the
state transition data block has the first value and that the second data block is different
from the first data block when the state transition data block has the second value; and

discharging liquid drops according to the second data block.

6. (cancelled)